

What Is Claimed Is:

1. A system for storing information in an instruction pipeline, the instruction pipeline including a plurality of pipeline units, a first one of the plurality of pipeline units decoding a first instruction into one or more second instructions, and a second one of the plurality of pipeline units assigning a first identifier to each of the plurality of second instructions, comprising:

a first register for storing information related to the first instruction; and  
a table having a first plurality of entries, each of the first plurality of entries receiving the stored information from the first register, each of the first plurality of entries corresponding to a respective one of the one or more second instructions and being indexed by the first respective identifier assigned to the corresponding respective one of the plurality of second instructions.

2. The system of claim 1, wherein a third one of the plurality of pipeline units is capable of detecting an event condition, and wherein the first register is loaded with a portion of a first one of the first plurality of entries when the third one of the plurality of pipeline units detects the event condition on a first one of the one or more second instructions, the first one of the first plurality of entries being indexed by the respective identifier assigned to the first one of the plurality of second instructions.

3. The system of claim 2, wherein at least one of the plurality of pipeline units provides a plurality of event recovery instructions to the pipeline when the third one of the plurality of pipeline units detects the event condition on the first one of the plurality of second instructions, wherein the second one of the plurality of pipeline units assigns each of the plurality of event recovery instructions a second respective identifier, and wherein the table includes a second plurality of entries, each of the second plurality of entries receiving the portion of the first one of the first plurality of entries from the first register, each of the second plurality of entries corresponding to a respective one of the plurality of event recovery instructions and being indexed by the second respective identifier assigned to the corresponding respective one of the plurality of event recovery instructions.

4. The system of claim 1, wherein the first instruction is a macro-code instruction and each of the one or more second instructions is a micro-code instruction.

5. The system of claim 1, wherein the first respective identifier is a sequence number.

6. A system for recovering from a condition in an instruction pipeline, the instruction pipeline including a plurality of pipeline units, a first one of the plurality of pipeline units decoding a first instruction into one or more second instructions, and a second one of the plurality of pipeline units assigning a first respective identifier to each of the one or more second instructions, a third one of the plurality of pipeline units capable of detecting the condition, comprising:

- a first register for storing information related to the first instruction;

- a table having a first plurality of entries, each of the first plurality of entries receiving the stored information from the first register, each of the first plurality of entries corresponding to a respective one of the one or more second instructions and being indexed by the first respective identifier assigned to the corresponding respective one of the one or more second instructions;

- a second register, wherein the second register is loaded with a first portion of a first one of the first plurality of entries when the third one of the plurality of pipeline units detects the condition, the condition occurring on a first one of the one or more second instruction, the first one of the first plurality of entries being indexed by the respective identifier assigned to the first one of the one or more second instructions.

7. The system of claim 6, wherein the first register is loaded with a second portion of the first one of the plurality of entries.

8. The system of claim 7, wherein the detected condition is an event condition, wherein at least one of the plurality of pipeline units provides a plurality of event recovery instructions to the pipeline when the third one of the plurality of pipeline units detects the event condition on the first one of the one or more second instructions, wherein the second one of the plurality of pipeline units assigns each of the plurality of event recovery instructions a second respective identifier, and wherein the table includes a second plurality of entries, each of the second plurality of entries receiving the second portion of the first one of the first plurality of entries from the first register, each of the second plurality of entries corresponding to a respective one of the plurality of event recovery instructions and being indexed by the second respective identifier assigned to the corresponding respective one of the plurality of event recovery instructions.

9. The system of claim 6, wherein the detected condition is a micro-branch misprediction condition.

10. The system of claim 6, wherein the first respective identifier is a sequence number.

11. A method for storing information in an instruction pipeline, the instruction pipeline including a plurality of pipeline units, a first one of the plurality of pipeline units decoding a first instruction into one or more second instructions, and a second one of the plurality of pipeline units assigning a first respective identifier to each of the one or more second instructions, comprising the steps of:

storing in a first register information related to the first instruction;

for each of the one or more second instructions, receiving the assigned identifier;

and

for each of the one or more second instructions, storing in a respective one of a plurality of table entries the information stored in the first register as a function of the received assigned identifier.

12. The method of claim 11, further comprising the steps

detecting an event condition on a first one of the one or more second instructions;

receiving a second assigned identifier, the second assigned identifier being assigned to the first one of the one or more second instructions;

selecting one table entry from the plurality of table entries as a function of the second assigned identifier; and

storing a portion of the selected one table entry in the first register.

13. The method of claim 12, further comprising the steps of:

receiving from one of the plurality of pipeline units a plurality of event recovery instructions;

assigning each of the plurality of event recovery instructions a third respective identifier;

for each of the plurality of event recovery instructions, receiving the assigned third respective identifier; and

for each of the plurality of event recovery instructions, storing in a second respective one of the plurality of table entries the information stored in the portion of the

selected one table entry from the first register as a function of the received assigned third respective identifier.

14. The method of claim 11, further comprising the steps

- detecting a micro-branch misprediction condition on a first one of the one or more second instructions;

- receiving a second assigned identifier, the second assigned identifier being assigned to the first one of the one or more second instructions;

- selecting one table entry from the plurality of table entries as a function of the second assigned identifier; and

- storing a portion of the selected one table entry in the first register.

15. The method of claim 14, further comprising the steps of:

- receiving from one of the plurality of pipeline units a plurality of micro-branch misprediction recovery instructions;

- assigning each of the plurality of micro-branch misprediction recovery instructions a third respective identifier;

- for each of the plurality of micro-branch misprediction recovery instructions, receiving the assigned third respective identifier; and

- for each of the plurality of micro-branch misprediction recovery instructions, storing in a second respective one of the plurality of table entries the information stored in the portion of the selected one table entry from the first register as a function of the received assigned third respective identifier.

16. A method for recovering from a condition in an instruction pipeline, the instruction pipeline including a plurality of pipeline units, a first one of the plurality of pipeline units decoding a first instruction into one or more second instructions, and a second one of the plurality of pipeline units assigning a first respective identifier to each of the one or more second instructions, comprising the steps of:

- storing in a first register information related to the first instruction;

- for each of the one or more second instructions, receiving the assigned identifier;

and

- for each of the one or more second instructions, storing in a respective one of a plurality of table entries the information stored in the first register as a function of the received assigned identifier; and

- detecting the condition on a first one of the one or more second instructions;

loading the first register with a first portion of a first one of the plurality of table entries, the first one of the plurality of table entries being retrieved as a function of the identifier assigned to the first one of the one or more second instructions; and

loading a second register with a second portion of a first one of the first plurality of entries.

17. The system of claim 16, wherein the condition is an event condition, further comprising the steps of:

receiving from one of the plurality of pipeline units a plurality of event recovery instructions;

for each of the plurality of event recovery instructions, assigning a second respective identifier; and

for each of the plurality of event recovery instructions, storing in a second respective one of the plurality of table entries the first portion of the first one of the plurality of table entries from the first register.

18. The system of claim 16, wherein the condition is an micro-branch misprediction condition, further comprising the steps of:

receiving from one of the plurality of pipeline units a plurality of micro-branch misprediction recovery instructions;

for each of the plurality of micro-branch misprediction recovery instructions, assigning a second respective identifier; and

for each of the plurality of micro-branch recovery instructions, storing in a second respective one of the plurality of table entries the first portion of the first one of the plurality of table entries from the first register.